

## SEQUENCE LISTING

&lt;110&gt; Curtis, Rory A.J.

<120> 52906, 33408, AND 12189, NOVEL POTASSIUM  
CHANNEL FAMILY MEMBERS AND USES THEREOF

&lt;130&gt; 10448-061001

&lt;150&gt; US 60/209,845

&lt;151&gt; 2000-06-06

&lt;160&gt; 13

&lt;170&gt; FastSEQ for Windows Version 4.0

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&lt;211&gt; 3525

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (638)...(3178)

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Met Pro Ile Val Leu Val

1 5

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Gly Pro Ser Ser His Gln Gln Glu Ser Pro Leu Pro Thr Ile Thr	
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cat tgc gca ggg tgc acc acc gct tgg tct ccc tgc agc ttt aac agc	799
His Cys Ala Gly Cys Thr Ala Trp Ser Pro Cys Ser Phe Asn Ser	
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Pro Asp Met Glu Thr Pro Leu Gln Phe Gln Arg Gly Phe Phe Pro Glu	
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caa cag agc cag gac aag ccg tgc ccg ccc ttc gcg ccc ctc ccg cac Gln Gln Ser Gln Asp Lys Pro Cys Pro Pro Phe Ala Pro Leu Pro His 90 95 100	943
cct cac cac cac ccg cac ctc gcg cac cag cag ccg gcc agc ggc ggc Pro His His His Pro His Leu Ala His Gln Gln Pro Ala Ser Gly Gly 105 110 115	991
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cac cgg cgc gcc ctg ttc gaa aag cgc aag cgg ctc agc gac tac gcg His Arg Arg Ala Leu Phe Glu Lys Arg Lys Arg Leu Ser Asp Tyr Ala 395 400 405	1855
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Thr Ala Asp Val Asp Ile Ile Leu Ser Ile Pro Met Phe Leu Arg Leu			
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Tyr Leu Ile Ala Arg Val Met Leu Leu His Ser Lys Leu Phe Thr Asp			
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acc tcc tct aga agc att gga gca ctt aat aag ata aac ttc aat aca			2335
Thr Ser Ser Arg Ser Ile Gly Ala Leu Asn Lys Ile Asn Phe Asn Thr			
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cgt ttt gtt atg aag act tta atg act ata tgc cca gga act gta ctc			2383
Arg Phe Val Met Lys Thr Leu Met Thr Ile Cys Pro Gly Thr Val Leu			
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Leu Val Phe Ser Ile Ser Leu Trp Ile Ile Ala Ala Trp Thr Val Arg			
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gct tgt gaa agg tac cat gat caa cag gat gtt act agc aac ttc ctt			2479
Ala Cys Glu Arg Tyr His Asp Gln Gln Asp Val Thr Ser Asn Phe Leu			
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gac atg gta cct aac aca tac tgt gga aaa gga gtc tgc tta ctt act			2575
Asp Met Val Pro Asn Thr Tyr Cys Gly Lys Gly Val Cys Leu Leu Thr			
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gga att atg ggt gct ggt tgc aca gcc ctg gtg gta gct gta gtg gca			2623
Gly Ile Met Gly Ala Gly Cys Thr Ala Leu Val Val Ala Val Val Ala			
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Arg Lys Leu Glu Leu Thr Lys Ala Glu Lys His Val His Asn Phe Met			
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atg gat act cag ctg act aaa aga gta aaa aat gca gct gcc aat gta			2719
Met Asp Thr Gln Leu Thr Lys Arg Val Lys Asn Ala Ala Asn Val			
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ctc agg gaa aca tgg cta att tac aaa aat aca aag cta gtg aaa aag			2767
Leu Arg Glu Thr Trp Leu Ile Tyr Lys Asn Thr Lys Leu Val Lys Lys			
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ata gat cat gca aaa gta aga aaa cat caa cga aaa ttc ctg caa gct			2815
Ile Asp His Ala Lys Val Arg Lys His Gln Arg Lys Phe Leu Gln Ala			
715	720	725	
att cat caa tta aga agt gta aaa atg gag cag agg aaa ctg aat gac			2863
Ile His Gln Leu Arg Ser Val Lys Met Glu Gln Arg Lys Leu Asn Asp			
730	735	740	
caa gca aac act ttg gtg gac ttg gca aag acc cag aac atc atg tat			2911
Gln Ala Asn Thr Leu Val Asp Leu Ala Lys Thr Gln Asn Ile Met Tyr			

745	750	755	
gat atg att tct gac tta aac gaa agg agt gaa gac ttc gag aag agg Asp Met Ile Ser Asp Leu Asn Glu Arg Ser Glu Asp Phe Glu Lys Arg			2959
760	765	770	
att gtt acc ctg gaa aca aaa cta gag act ttg att ggt agc atc cac Ile Val Thr Leu Glu Thr Lys Leu Glu Thr Leu Ile Gly Ser Ile His			3007
775	780	785	790
gcc ctc cct ggg ctc ata agc cag acc atc agg cag cag aga gat Ala Leu Pro Gly Leu Ile Ser Gln Thr Ile Arg Gln Gln Arg Asp			3055
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gct gag cggtcccggtccaggaggcggtccgtcttccaca Ala Glu Arg Ser Arg Ser Ser Arg Arg Arg Ser Ser Thr			3151
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Pro Leu Pro Thr Ile Thr His Cys Ala Gly Cys Thr Thr Ala Trp Ser			
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Pro Cys Ser Phe Asn Ser Pro Asp Met Glu Thr Pro Leu Gln Phe Gln			
50	55	60	
Arg Gly Phe Phe Pro Glu Gln Pro Pro Pro Pro Arg Ser Ser His			
65	70	75	80
Leu His Cys Gln Gln Gln Gln Ser Gln Asp Lys Pro Cys Pro Pro			
85	90	95	
Phe Ala Pro Leu Pro His His His Pro His Leu Ala His Gln			
100	105	110	
Gln Pro Ala Ser Gly Gly Ser Ser Pro Cys Leu Arg Cys Asn Ser Cys			
115	120	125	
Ala Ser Ser Gly Ala Pro Ala Ala Gly Ala Gly Asp Asn Leu Ser Leu			
130	135	140	

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 Ser Pro Leu Ser Gly Ser Ser Cys Cys Cys Cys Cys Ser Ser Arg  
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 Arg Gly Ser Gln Leu Asn Val Ser Glu Leu Thr Pro Ser Ser His Ala  
 180 185 190  
 Ser Ala Leu Arg Gln Gln Tyr Ala Gln Gln Ser Ala Gln Gln Ser Ala  
 195 200 205  
 Ser Ala Ser Gln Tyr His Gln Cys His Ser Leu Gln Pro Ala Ala Ser  
 210 215 220  
 Pro Thr Gly Ser Leu Gly Ser Leu Gly Ser Gly Pro Pro Leu Ser His  
 225 230 235 240  
 His His His Pro His Pro Ala His His Gln His His Gln Pro Gln  
 245 250 255  
 Ala Arg Arg Glu Ser Asn Pro Phe Thr Glu Ile Ala Met Ser Ser Cys  
 260 265 270  
 Arg Tyr Asn Gly Gly Val Met Arg Pro Leu Ser Asn Leu Ser Ala Ser  
 275 280 285  
 Arg Arg Asn Leu His Glu Met Asp Ser Glu Ala Gln Pro Leu Gln Pro  
 290 295 300  
 Pro Ala Ser Val Gly Gly Gly Ala Ser Ser Pro Ser Ala Ala  
 305 310 315 320  
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 325 330 335  
 Ser Lys Pro Glu His Asn Asn Ser Asn Asn Leu Ala Leu Tyr Gly Thr  
 340 345 350  
 Gly Gly Gly Ser Thr Gly Gly Gly Gly Gly Gly Ser Gly  
 355 360 365  
 His Gly Ser Ser Ser Gly Thr Lys Ser Ser Lys Lys Lys Asn Gln Asn  
 370 375 380  
 Ile Gly Tyr Lys Leu Gly His Arg Arg Ala Leu Phe Glu Lys Arg Lys  
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 Arg Leu Ser Asp Tyr Ala Leu Ile Phe Gly Met Phe Gly Ile Val Val  
 405 410 415  
 Met Val Ile Glu Thr Glu Leu Ser Trp Gly Ala Tyr Asp Lys Ala Ser  
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 485 490 495  
 Ile Pro Gly Asn Tyr Thr Phe Thr Trp Thr Ala Arg Leu Ala Phe Ser  
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 Tyr Ala Pro Ser Thr Thr Ala Asp Val Asp Ile Ile Leu Ser Ile  
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 Pro Met Phe Leu Arg Leu Tyr Leu Ile Ala Arg Val Met Leu Leu His  
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 Cys Pro Gly Thr Val Leu Leu Val Phe Ser Ile Ser Leu Trp Ile Ile  
 580 585 590  
 Ala Ala Trp Thr Val Arg Ala Cys Glu Arg Tyr His Asp Gln Gln Asp

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Leu Ser Ile Gly Tyr Gly Asp Met Val Pro Asn Thr Tyr Cys Gly Lys		
625	630	635
Gly Val Cys Leu Leu Thr Gly Ile Met Gly Ala Gly Cys Thr Ala Leu		
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Val Val Ala Val Ala Arg Lys Leu Glu Leu Thr Lys Ala Glu Lys		
660	665	670
His Val His Asn Phe Met Met Asp Thr Gln Leu Thr Lys Arg Val Lys		
675	680	685
Asn Ala Ala Ala Asn Val Leu Arg Glu Thr Trp Leu Ile Tyr Lys Asn		
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Thr Lys Leu Val Lys Lys Ile Asp His Ala Lys Val Arg Lys His Gln		
705	710	715
Arg Lys Phe Leu Gln Ala Ile His Gln Leu Arg Ser Val Lys Met Glu		
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Gln Arg Lys Leu Asn Asp Gln Ala Asn Thr Leu Val Asp Leu Ala Lys		
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Glu Asp Phe Glu Lys Arg Ile Val Thr Leu Glu Thr Lys Leu Glu Thr		
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785	790	795
Arg Gln Gln Gln Arg Asp Phe Ile Glu Ala Gln Met Glu Ser Tyr Asp		
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Lys His Val Thr Tyr Asn Ala Glu Arg Ser Arg Ser Ser Ser Arg Arg		
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Gly Leu Val Ala Pro Gln Asn Thr Phe Leu Glu Asn Ile Val Arg Arg  
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tcc agt gaa tca agt ttc tta ctg gga aat gcc cag att gtg gat tgg 391  
Ser Ser Glu Ser Ser Phe Leu Leu Gly Asn Ala Gln Ile Val Asp Trp  
25 30 35

cct gta gtt tat agt aat gac ggt ttt tgt aaa ctc tct gga tat cat 439  
Pro Val Val Tyr Ser Asn Asp Gly Phe Cys Lys Leu Ser Gly Tyr His  
40 45 50

cga gct gac gtc atg cag aaa agc agc act tgc agt ttt atg tat ggg 487  
Arg Ala Asp Val Met Gln Lys Ser Ser Thr Cys Ser Phe Met Tyr Gly

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aac tac gaa tca aac tgc ttt gaa gtt ctt ctg tac aag aaa aac aga Asn Tyr Glu Ser Asn Cys Phe Glu Val Leu Leu Tyr Lys Lys Asn Arg	90	95	100	583
acc cct gtt tgg ttt tat atg caa att gca cca ata aga aat gaa cat Thr Pro Val Trp Phe Tyr Met Gln Ile Ala Pro Ile Arg Asn Glu His	105	110	115	631
gaa aag gtg gtc ttg ttc ctg tgt act ttc aag gat att acg ttg ttc Glu Lys Val Val Leu Phe Leu Cys Thr Phe Lys Asp Ile Thr Leu Phe	120	125	130	679
aaa cag cca ata gag gat gat tca aca aaa ggt tgg acg aaa ttt gcc Lys Gln Pro Ile Glu Asp Asp Ser Thr Lys Gly Trp Thr Lys Phe Ala	135	140	145	727
cga ttg aca cgg gct ttg aca aat agc cga agt gtt ttg cag cag ctc Arg Leu Thr Arg Ala Leu Thr Asn Ser Arg Ser Val Leu Gln Gln Leu	155	160	165	775
acg cca atg aat aaa aca gag gtg gtc cat aaa cat tca aga cta gct Thr Pro Met Asn Lys Thr Glu Val Val His Lys His Ser Arg Leu Ala	170	175	180	823
gaa gtt ctt cag ctg gga tca gat atc ctt cct cag tat aaa caa gaa Glu Val Leu Gln Leu Gly Ser Asp Ile Leu Pro Gln Tyr Lys Gln Glu	185	190	195	871
gcg cca aag acg cca cca cac att att tta cat tat tgt gct ttt aaa Ala Pro Lys Thr Pro Pro His Ile Ile Leu His Tyr Cys Ala Phe Lys	200	205	210	919
act act tgg gat tgg gtg att tta att ctt acc ttc tac acc gcc att Thr Thr Trp Asp Trp Val Ile Leu Ile Leu Thr Phe Tyr Thr Ala Ile	215	220	225	967
atg gtt cct tat aat gtt tcc ttc aaa aca aag cag aac aac ata gcc Met Val Pro Tyr Asn Val Ser Phe Lys Thr Lys Gln Asn Asn Ile Ala	235	240	245	1015
tgg ctg gta ctg gat agt gtg gtg gac gtt att ttt ctg gtt gac atc Trp Leu Val Leu Asp Ser Val Val Asp Val Ile Phe Leu Val Asp Ile	250	255	260	1063
gtt tta aat ttt cac acg act ttc gtg ggg ccc ggt gga gag gtc att Val Leu Asn Phe His Thr Phe Val Gly Pro Gly Gly Glu Val Ile	265	270	275	1111
tct gac cct aag ctc ata agg atg aac tat ctg aaa act tgg ttt gtg Ser Asp Pro Lys Leu Ile Arg Met Asn Tyr Leu Lys Thr Trp Phe Val	280	285	290	1159

atc gat ctg ctg tct tgt tta cct tat gac atc atc aat gcc ttt gaa Ile Asp Leu Leu Ser Cys Leu Pro Tyr Asp Ile Ile Asn Ala Phe Glu 295 300 305 310	1207
aat gtg gat gag gga atc agc agt ctc ttc agt tct tta aaa gtg gtg Asn Val Asp Glu Gly Ile Ser Ser Leu Phe Ser Ser Leu Lys Val Val 315 320 325	1255
cgt ctc tta cga ctg ggc cgt gtg gct agg aaa ctg gac cat tac cta Arg Leu Leu Arg Leu Gly Arg Val Ala Arg Lys Leu Asp His Tyr Leu 330 335 340	1303
gaa tat gga gca gca gtc ctc gtg ctc ctg gtg tgt gtg ttt gga ctg Glu Tyr Gly Ala Ala Val Leu Val Leu Val Cys Val Phe Gly Leu 345 350 355	1351
gtg gcc cac tgg ctg gcc tgc ata tgg tat agc atc gga gac tac gag Val Ala His Trp Leu Ala Cys Ile Trp Tyr Ser Ile Gly Asp Tyr Glu 360 365 370	1399
gtc att gat gaa gtc act aac acc atc caa ata gac agt tgg ctc tac Val Ile Asp Glu Val Thr Asn Thr Ile Gln Ile Asp Ser Trp Leu Tyr 375 380 385 390	1447
cag ctg gct ttg agc att ggg act cca tat cgc tac aat acc agt gct Gln Leu Ala Leu Ser Ile Gly Thr Pro Tyr Arg Tyr Asn Thr Ser Ala 395 400 405	1495
ggg ata tgg gaa gga gga ccc agc aag gat tca ttg tac gtg tcc tct Gly Ile Trp Glu Gly Pro Ser Lys Asp Ser Leu Tyr Val Ser Ser 410 415 420	1543
ctc tac ttt acc atg aca agc ctt aca acc ata gga ttt gga aac ata Leu Tyr Phe Thr Met Thr Ser Leu Thr Thr Ile Gly Phe Gly Asn Ile 425 430 435	1591
gct cct acc aca gat gtg gag aag atg ttt tcg gtg gct atg atg atg Ala Pro Thr Thr Asp Val Glu Lys Met Phe Ser Val Ala Met Met Met 440 445 450	1639
gtt ggc tct ctt ctt tat gca act att ttt gga aat gtt aca aca att Val Gly Ser Leu Leu Tyr Ala Thr Ile Phe Gly Asn Val Thr Thr Ile 455 460 465 470	1687
ttc cag caa atg tat gcc aac acc aac cga tac cat gag atg ctg aat Phe Gln Gln Met Tyr Ala Asn Thr Asn Arg Tyr His Glu Met Leu Asn 475 480 485	1735
aat gta cgg gac ttc cta aaa ctc tat cag gtc cca aaa ggc ctt agt Asn Val Arg Asp Phe Leu Lys Leu Tyr Gln Val Pro Lys Gly Leu Ser 490 495 500	1783
gag cga gtc atg gat tat att gtc tca aca tgg tcc atg tca aaa ggc Glu Arg Val Met Asp Tyr Ile Val Ser Thr Trp Ser Met Ser Lys Gly 505 510 515	1831

att gat aca gaa aag gtc ctc tcc atc tgt ccc aag gac atg aga gct Ile Asp Thr Glu Lys Val Leu Ser Ile Cys Pro Lys Asp Met Arg Ala 520 525 530	1879
gat atc tgt gtt cat cta aac cgg aag gtt ttt aat gaa cat cct gct Asp Ile Cys Val His Leu Asn Arg Lys Val Phe Asn Glu His Pro Ala 535 540 545 550	1927
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caa acc att cac tgt gct ccc ggg gac ctc att tac cat gct gga gaa Gln Thr Ile His Cys Ala Pro Gly Asp Leu Ile Tyr His Ala Gly Glu 570 575 580	2023
agt gtg gat gcc ctc tgc ttt gtg gtg tca gga tcc ttg gaa gtc atc Ser Val Asp Ala Leu Cys Phe Val Val Ser Gly Ser Leu Glu Val Ile 585 590 595	2071
cag gat gat gag gtg gtg gct att tta ggg aag ggt gat gta ttt gga Gln Asp Asp Glu Val Val Ala Ile Leu Gly Lys Gly Asp Val Phe Gly 600 605 610	2119
gac atc ttc tgg aag gaa acc acc ctt gcc cat gca tgt gcg aac gtc Asp Ile Phe Trp Lys Glu Thr Thr Leu Ala His Ala Cys Ala Asn Val 615 620 625 630	2167
cgg gca ctg acg tac tgt gac cta cac atc atc aag cgg gaa gcc ttg Arg Ala Leu Thr Tyr Cys Asp Leu His Ile Ile Lys Arg Glu Ala Leu 635 640 645	2215
ctc aaa gtc ctg gac ttt tat aca gct ttt gca aac tcc ttc tca agg Leu Lys Val Leu Asp Phe Tyr Thr Ala Phe Ala Asn Ser Phe Ser Arg 650 655 660	2263
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atc agt gat gtg aag aaa gag gag gag cgc ctc cgg cag aag aat Ile Ser Asp Val Lys Lys Glu Glu Glu Arg Leu Arg Gln Lys Asn 680 685 690	2359
gag gtg acc ctc agc att ccc gtg gac cac cca gtc aga aag ctc ttc Glu Val Thr Leu Ser Ile Pro Val Asp His Pro Val Arg Lys Leu Phe 695 700 705 710	2407
cag aag ttc aag cag cag aag gag ctg cgg aat cag ggc tca aca cag Gln Lys Phe Lys Gln Gln Lys Glu Leu Arg Asn Gln Gly Ser Thr Gln 715 720 725	2455
ggt gac cct gag agg aac caa ctc cag gta gag agc cgc tcc tta cag Gly Asp Pro Glu Arg Asn Gln Leu Gln Val Glu Ser Arg Ser Leu Gln 730 735 740	2503
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Asn Gly Thr Ser Ile Thr Gly Thr Ser Val Val Thr Val Ser Gln Ile			
745	750	755	
act ccc att cag acg tct ctg gcc tat gtg aaa acc agt gaa tcc ctt			2599
Thr Pro Ile Gln Thr Ser Leu Ala Tyr Val Lys Thr Ser Glu Ser Leu			
760	765	770	
aag cag aac aac cgt gat gcc atg gaa ctc aag ccc aac ggc ggt gct			2647
Lys Gln Asn Asn Arg Asp Ala Met Glu Leu Lys Pro Asn Gly Gly Ala			
775	780	785	790
gac caa aaa tgt ctc aaa gtc aac agc cca ata aga atg aag aat gga			2695
Asp Gln Lys Cys Leu Lys Val Asn Ser Pro Ile Arg Met Lys Asn Gly			
795	800	805	
aat gga aaa ggg tgg ctg cga ctc aag aat aat atg gga gcc cat gag			2743
Asn Gly Lys Gly Trp Leu Arg Leu Lys Asn Asn Met Gly Ala His Glu			
810	815	820	
gag aaa aag gaa gac tgg aat aat gtc act aaa gct gag tca atg ggg			2791
Glu Lys Lys Glu Asp Trp Asn Asn Val Thr Lys Ala Glu Ser Met Gly			
825	830	835	
cta ttg tct gag gac ccc aag agc agt gat tca gag aac agt gtg acc			2839
Leu Leu Ser Glu Asp Pro Lys Ser Ser Asp Ser Glu Asn Ser Val Thr			
840	845	850	
aaa aac cca cta agg aaa aca gat tct tgt gac agt gga att aca aaa			2887
Lys Asn Pro Leu Arg Lys Thr Asp Ser Cys Asp Ser Gly Ile Thr Lys			
855	860	865	870
agt gac ctt cgt ttg gat aag gct ggg gag gcc cga agt ccg cta gag			2935
Ser Asp Leu Arg Leu Asp Lys Ala Gly Glu Ala Arg Ser Pro Leu Glu			
875	880	885	
cac agt ccc atc cag gct gat gcc aag cac ccc ttt tat ccc atc ccc			2983
His Ser Pro Ile Gln Ala Asp Ala Lys His Pro Phe Tyr Pro Ile Pro			
890	895	900	
gag cag gcc tta cag acc aca ctg cag gaa gtc aaa cac gaa ctc aaa			3031
Glu Gln Ala Leu Gln Thr Thr Leu Gln Glu Val Lys His Glu Leu Lys			
905	910	915	
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Glu Asp Ile Gln Leu Leu Ser Cys Arg Met Thr Ala Leu Glu Lys Gln			
920	925	930	
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Val Ala Glu Ile Leu Lys Ile Leu Ser Glu Lys Ser Val Pro Gln Ala			
935	940	945	950
tca tct ccc aaa tcc caa atg cca ctc caa gta ccc ccc cag ata cca			3175
Ser Ser Pro Lys Ser Gln Met Pro Leu Gln Val Pro Pro Gln Ile Pro			
955	960	965	
tgt cag gat att ttt agt gtc tca agg cct gaa tca cct gaa tct gac			3223
Cys Gln Asp Ile Phe Ser Val Ser Arg Pro Glu Ser Pro Glu Ser Asp			

970

975

980

3271

aaa gat gaa atc cac ttt taatataatat acatataatat ttgttaatat  
 Lys Asp Glu Ile His Phe  
 985

3331

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3391

3451

3511

3553

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&lt;211&gt; 988

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5

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Glu Asn Ile Val Arg Arg Ser Ser Glu Ser Ser Phe Leu Leu Gly Asn		
20	25	30

Ala Gln Ile Val Asp Trp Pro Val Val Tyr Ser Asn Asp Gly Phe Cys		
35	40	45

Lys Leu Ser Gly Tyr His Arg Ala Asp Val Met Gln Lys Ser Ser Thr		
50	55	60

Cys Ser Phe Met Tyr Gly Glu Leu Thr Asp Lys Lys Thr Ile Glu Lys			
65	70	75	80

Val Arg Gln Thr Phe Asp Asn Tyr Glu Ser Asn Cys Phe Glu Val Leu		
85	90	95

Leu Tyr Lys Lys Asn Arg Thr Pro Val Trp Phe Tyr Met Gln Ile Ala		
100	105	110

Pro Ile Arg Asn Glu His Glu Lys Val Val Leu Phe Leu Cys Thr Phe		
115	120	125

Lys Asp Ile Thr Leu Phe Lys Gln Pro Ile Glu Asp Asp Ser Thr Lys		
130	135	140

Gly Trp Thr Lys Phe Ala Arg Leu Thr Arg Ala Leu Thr Asn Ser Arg			
145	150	155	160

Ser Val Leu Gln Gln Leu Thr Pro Met Asn Lys Thr Glu Val Val His		
165	170	175

Lys His Ser Arg Leu Ala Glu Val Leu Gln Leu Gly Ser Asp Ile Leu		
180	185	190

Pro Gln Tyr Lys Gln Glu Ala Pro Lys Thr Pro Pro His Ile Ile Leu		
195	200	205

His Tyr Cys Ala Phe Lys Thr Thr Trp Asp Trp Val Ile Leu Ile Leu		
210	215	220

Thr Phe Tyr Thr Ala Ile Met Val Pro Tyr Asn Val Ser Phe Lys Thr			
225	230	235	240

Lys Gln Asn Asn Ile Ala Trp Leu Val Leu Asp Ser Val Val Asp Val		
245	250	255

Ile Phe Leu Val Asp Ile Val Leu Asn Phe His Thr Thr Phe Val Gly		
260	265	270

Pro Gly Gly Glu Val Ile Ser Asp Pro Lys Leu Ile Arg Met Asn Tyr		
275	280	285

Leu Lys Thr Trp Phe Val Ile Asp Leu Leu Ser Cys Leu Pro Tyr Asp		
290	295	300

Ile Ile Asn Ala Phe Glu Asn Val Asp Glu Gly Ile Ser Ser Leu Phe	
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 Ser Ser Leu Lys Val Val Arg Leu Leu Arg Leu Gly Arg Val Ala Arg  
        325                    330                    335  
 Lys Leu Asp His Tyr Leu Glu Tyr Gly Ala Ala Val Leu Val Leu Leu  
        340                    345                    350  
 Val Cys Val Phe Gly Leu Val Ala His Trp Leu Ala Cys Ile Trp Tyr  
        355                    360                    365  
 Ser Ile Gly Asp Tyr Glu Val Ile Asp Glu Val Thr Asn Thr Ile Gln  
        370                    375                    380  
 Ile Asp Ser Trp Leu Tyr Gln Leu Ala Leu Ser Ile Gly Thr Pro Tyr  
        385                    390                    395                    400  
 Arg Tyr Asn Thr Ser Ala Gly Ile Trp Glu Gly Gly Pro Ser Lys Asp  
        405                    410                    415  
 Ser Leu Tyr Val Ser Ser Leu Tyr Phe Thr Met Thr Ser Leu Thr Thr  
        420                    425                    430  
 Ile Gly Phe Gly Asn Ile Ala Pro Thr Thr Asp Val Glu Lys Met Phe  
        435                    440                    445  
 Ser Val Ala Met Met Met Val Gly Ser Leu Leu Tyr Ala Thr Ile Phe  
        450                    455                    460  
 Gly Asn Val Thr Thr Ile Phe Gln Gln Met Tyr Ala Asn Thr Asn Arg  
        465                    470                    475                    480  
 Tyr His Glu Met Leu Asn Asn Val Arg Asp Phe Leu Lys Leu Tyr Gln  
        485                    490                    495  
 Val Pro Lys Gly Leu Ser Glu Arg Val Met Asp Tyr Ile Val Ser Thr  
        500                    505                    510  
 Trp Ser Met Ser Lys Gly Ile Asp Thr Glu Lys Val Leu Ser Ile Cys  
        515                    520                    525  
 Pro Lys Asp Met Arg Ala Asp Ile Cys Val His Leu Asn Arg Lys Val  
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 Phe Asn Glu His Pro Ala Phe Arg Leu Ala Ser Asp Gly Cys Leu Arg  
        545                    550                    555                    560  
 Ala Leu Ala Val Glu Phe Gln Thr Ile His Cys Ala Pro Gly Asp Leu  
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 Ile Tyr His Ala Gly Glu Ser Val Asp Ala Leu Cys Phe Val Val Ser  
        580                    585                    590  
 Gly Ser Leu Glu Val Ile Gln Asp Asp Glu Val Val Ala Ile Leu Gly  
        595                    600                    605  
 Lys Gly Asp Val Phe Gly Asp Ile Phe Trp Lys Glu Thr Thr Leu Ala  
        610                    615                    620  
 His Ala Cys Ala Asn Val Arg Ala Leu Thr Tyr Cys Asp Leu His Ile  
        625                    630                    635                    640  
 Ile Lys Arg Glu Ala Leu Leu Lys Val Leu Asp Phe Tyr Thr Ala Phe  
        645                    650                    655  
 Ala Asn Ser Phe Ser Arg Asn Leu Thr Leu Thr Cys Asn Leu Arg Lys  
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 Arg Ile Ile Phe Arg Lys Ile Ser Asp Val Lys Lys Glu Glu Glu  
        675                    680                    685  
 Arg Leu Arg Gln Lys Asn Glu Val Thr Leu Ser Ile Pro Val Asp His  
        690                    695                    700  
 Pro Val Arg Lys Leu Phe Gln Lys Phe Lys Gln Gln Lys Glu Leu Arg  
        705                    710                    715                    720  
 Asn Gln Gly Ser Thr Gln Gly Asp Pro Glu Arg Asn Gln Leu Gln Val  
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 Glu Ser Arg Ser Leu Gln Asn Gly Thr Ser Ile Thr Gly Thr Ser Val  
        740                    745                    750  
 Val Thr Val Ser Gln Ile Thr Pro Ile Gln Thr Ser Leu Ala Tyr Val  
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Lys Thr Ser Glu Ser Leu Lys Gln Asn Asn Arg Asp Ala Met Glu Leu  
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 Lys Pro Asn Gly Gly Ala Asp Gln Lys Cys Leu Lys Val Asn Ser Pro  
 785 790 795 800  
 Ile Arg Met Lys Asn Gly Asn Gly Lys Trp Leu Arg Leu Lys Asn  
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 Asn Met Gly Ala His Glu Glu Lys Lys Glu Asp Trp Asn Asn Val Thr  
 820 825 830  
 Lys Ala Glu Ser Met Gly Leu Leu Ser Glu Asp Pro Lys Ser Ser Asp  
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 850 855 860  
 Asp Ser Gly Ile Thr Lys Ser Asp Leu Arg Leu Asp Lys Ala Gly Glu  
 865 870 875 880  
 Ala Arg Ser Pro Leu Glu His Ser Pro Ile Gln Ala Asp Ala Lys His  
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 Pro Phe Tyr Pro Ile Pro Glu Gln Ala Leu Gln Thr Thr Leu Gln Glu  
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 Arg Ala Arg Thr Leu Gly Arg Phe Pro Asp Thr Leu Leu Gly Asp Pro  
 20 25 30

gcg cgc cgc ggc cgc ttc tac gac gac gcg cgc cgc gag tat ttc ttc 144  
 Ala Arg Arg Gly Arg Phe Tyr Asp Asp Ala Arg Arg Glu Tyr Phe Phe  
 35 40 45

gac cgg cac cgg ccc agc ttc gac gcc gtg ctc tac tac tac cag tcc 192  
 Asp Arg His Arg Pro Ser Phe Asp Ala Val Leu Tyr Tyr Tyr Gln Ser  
 50 55 60

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 Gly Gly Arg Leu Arg Arg Pro Ala His Val Pro Leu Asp Val Phe Leu

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85	90	95		
cgc gag gac gag ggc tgc ccg gtg ccg ccc gag cgc ccc ctg ccc cgc Arg Glu Asp Glu Gly Cys Pro Val Pro Pro Glu Arg Pro Leu Pro Arg				336
100	105	110		
cgc gcc ttc gcc cgc cag ctg tgc ctg ctt ttc gag ttt ccc gag agc Arg Ala Phe Ala Arg Gln Leu Cys Leu Leu Phe Glu Phe Pro Glu Ser				384
115	120	125		
tct cag gcc gcg cgc gtg ctc gcc gta gtc tcc gtg ctg gtc atc ctc Ser Gln Ala Ala Arg Val Leu Ala Val Val Ser Val Leu Val Ile Leu				432
130	135	140		
gtc tcc atc gtc gtc ttc tgc ctc gag acg ctg cct gac ttc cgc gac Val Ser Ile Val Val Phe Cys Leu Glu Thr Leu Pro Asp Phe Arg Asp				480
145	150	155	160	
gac cgc gac ggc acg ggg ctt gct gca gcc gca gcc ggc cgc ttc Asp Arg Asp Gly Thr Gly Leu Ala Ala Ala Ala Ala Gly Pro Phe				528
165	170	175		
ccc gct ccg ctg aat ggc tcc agc caa atg cct gga aat cca ccc cgc Pro Ala Pro Leu Asn Gly Ser Ser Gln Met Pro Gly Asn Pro Pro Arg				576
180	185	190		
ctg ccc ttc aat gac ccg ttc ttc gtg gtg gag acg ctg tgt att tgt Leu Pro Phe Asn Asp Pro Phe Val Val Glu Thr Leu Cys Ile Cys				624
195	200	205		
tgg ttc tcc ttt gag ctg ctg gta cgc ctc ctg gtc tgt cca agc aag Trp Phe Ser Phe Glu Leu Leu Val Arg Leu Leu Val Cys Pro Ser Lys				672
210	215	220		
gct atc ttc ttc aag aac gtg atg aac ctc atc gat ttt gtg gct atc Ala Ile Phe Phe Lys Asn Val Met Asn Leu Ile Asp Phe Val Ala Ile				720
225	230	235	240	
ctt ccc tac ttt gtg gca ctg ggc acc gag ctg gcc cgg cag cga ggg Leu Pro Tyr Phe Val Ala Leu Gly Thr Glu Leu Ala Arg Gln Arg Gly				768
245	250	255		
gtg ggc cag cag gcc atg tca ctg gcc atc ctg aga gtc atc cga ttg Val Gly Gln Gln Ala Met Ser Leu Ala Ile Leu Arg Val Ile Arg Leu				816
260	265	270		
gtg cgt gtc ttc cgc atc ttc aag ctg tcc cgg cac tca aag ggc ctg Val Arg Val Phe Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly Leu				864
275	280	285		
caa atc ttg ggc cag acg ctt cgg gcc tcc atg cgt gag ctg ggc ctc Gln Ile Leu Gly Gln Thr Leu Arg Ala Ser Met Arg Glu Leu Gly Leu				912
290	295	300		

ctc atc ttt ttc ctc ttc atc ggt gtg gtc ctc ttt tcc agc gcc gtc Leu Ile Phe Phe Leu Phe Ile Gly Val Val Leu Phe Ser Ser Ala Val 305 310 315 320	960
tac ttt gcc gaa gtt gac cggt gtg gac tcc cat ttc act agc atc cct Tyr Phe Ala Glu Val Asp Arg Val Asp Ser His Phe Thr Ser Ile Pro 325 330 335	1008
gag tcc ttc tgg tgg gcg gta gtc acc atg act aca gtt ggc tat gga Glu Ser Phe Trp Trp Ala Val Val Thr Met Thr Val Gly Tyr Gly 340 345 350	1056
gac atg gca ccc gtc act gtg ggt ggc aag ata gtg ggc tct ctg tgt Asp Met Ala Pro Val Thr Val Gly Gly Lys Ile Val Gly Ser Leu Cys 355 360 365	1104
gcc att gcg ggc gtg ctg act att tcc ctg cca gtg ccc gtc att gtc Ala Ile Ala Gly Val Leu Thr Ile Ser Leu Pro Val Pro Val Ile Val 370 375 380	1152
tcc aat ttc agc tac ttt tat cac cggt gag aca gag ggc gaa gag gct Ser Asn Phe Ser Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu Ala 385 390 395 400	1200
ggg atg ttc agc cat gtg gac atg cag cct tgt ggc cca ctg gag ggc Gly Met Phe Ser His Val Asp Met Gln Pro Cys Gly Pro Leu Glu Gly 405 410 415	1248
aag gcc aat ggg ggg ctg gtg gac ggg gag gta cct gag cta cca cct Lys Ala Asn Gly Gly Leu Val Asp Gly Glu Val Pro Glu Leu Pro Pro 420 425 430	1296
cca ctc tgg gca ccc cca ggg aaa cac ctg gtc acc gaa gtg Pro Leu Trp Ala Pro Pro Gly Lys His Leu Val Thr Glu Val 435 440 445	1338
tga	1341
<210> 8	
<211> 446	
<212> PRT	
<213> Homo sapiens	
<400> 8	
Cys Cys Glu Arg Leu Val Leu Asn Val Ala Gly Leu Arg Phe Glu Thr 1 5 10 15	
Arg Ala Arg Thr Leu Gly Arg Phe Pro Asp Thr Leu Leu Gly Asp Pro 20 25 30	
Ala Arg Arg Gly Arg Phe Tyr Asp Asp Ala Arg Arg Glu Tyr Phe Phe 35 40 45	
Asp Arg His Arg Pro Ser Phe Asp Ala Val Leu Tyr Tyr Tyr Gln Ser 50 55 60	
Gly Gly Arg Leu Arg Arg Pro Ala His Val Pro Leu Asp Val Phe Leu 65 70 75 80	
Glu Glu Val Ala Phe Tyr Gly Leu Gly Ala Ala Ala Leu Ala Arg Leu 85 90 95	

Arg Glu Asp Glu Gly Cys Pro Val Pro Pro Glu Arg Pro Leu Pro Arg  
 100 105 110  
 Arg Ala Phe Ala Arg Gln Leu Cys Leu Leu Phe Glu Phe Pro Glu Ser  
 115 120 125  
 Ser Gln Ala Ala Arg Val Leu Ala Val Val Ser Val Leu Val Ile Leu  
 130 135 140  
 Val Ser Ile Val Val Phe Cys Leu Glu Thr Leu Pro Asp Phe Arg Asp  
 145 150 155 160  
 Asp Arg Asp Gly Thr Gly Leu Ala Ala Ala Ala Gly Pro Phe  
 165 170 175  
 Pro Ala Pro Leu Asn Gly Ser Ser Gln Met Pro Gly Asn Pro Pro Arg  
 180 185 190  
 Leu Pro Phe Asn Asp Pro Phe Phe Val Val Glu Thr Leu Cys Ile Cys  
 195 200 205  
 Trp Phe Ser Phe Glu Leu Leu Val Arg Leu Leu Val Cys Pro Ser Lys  
 210 215 220  
 Ala Ile Phe Phe Lys Asn Val Met Asn Leu Ile Asp Phe Val Ala Ile  
 225 230 235 240  
 Leu Pro Tyr Phe Val Ala Leu Gly Thr Glu Leu Ala Arg Gln Arg Gly  
 245 250 255  
 Val Gly Gln Gln Ala Met Ser Leu Ala Ile Leu Arg Val Ile Arg Leu  
 260 265 270  
 Val Arg Val Phe Arg Ile Phe Lys Leu Ser Arg His Ser Lys Gly Leu  
 275 280 285  
 Gln Ile Leu Gly Gln Thr Leu Arg Ala Ser Met Arg Glu Leu Gly Leu  
 290 295 300  
 Leu Ile Phe Phe Leu Phe Ile Gly Val Val Leu Phe Ser Ser Ala Val  
 305 310 315 320  
 Tyr Phe Ala Glu Val Asp Arg Val Asp Ser His Phe Thr Ser Ile Pro  
 325 330 335  
 Glu Ser Phe Trp Trp Ala Val Val Thr Met Thr Thr Val Gly Tyr Gly  
 340 345 350  
 Asp Met Ala Pro Val Thr Val Gly Gly Lys Ile Val Gly Ser Leu Cys  
 355 360 365  
 Ala Ile Ala Gly Val Leu Thr Ile Ser Leu Pro Val Pro Val Ile Val  
 370 375 380  
 Ser Asn Phe Ser Tyr Phe Tyr His Arg Glu Thr Glu Gly Glu Glu Ala  
 385 390 395 400  
 Gly Met Phe Ser His Val Asp Met Gln Pro Cys Gly Pro Leu Glu Gly  
 405 410 415  
 Lys Ala Asn Gly Gly Leu Val Asp Gly Glu Val Pro Glu Leu Pro Pro  
 420 425 430  
 Pro Leu Trp Ala Pro Pro Gly Lys His Leu Val Thr Glu Val  
 435 440 445

<210> 9  
 <211> 223  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> consensus sequence

<400> 9  
 Ile Leu Phe Ile Leu Asp Leu Leu Phe Val Leu Leu Phe Leu Leu Glu  
 1 5 10 15  
 Ile Val Leu Lys Phe Ile Ala Tyr Gly Leu Lys Ser Thr Ser Asn Ile

20	25	30
Ala Ala Lys Tyr Leu Lys Ser Ile Phe Asn Ile Leu Asp Leu Leu Ala		
35	40	45
Ile Leu Pro Leu Leu Leu Leu Val Leu Phe Leu Ser Gly Thr Glu		
50	55	60
Gln Val Ala Lys Lys Arg Leu Arg Glu Arg Phe Ser Leu Glu Leu Ser		
65	70	75
Gln Trp Tyr Tyr Arg Ile Leu Arg Phe Leu Arg Leu Leu Arg Leu Leu		
85	90	95
Arg Leu Leu Arg Leu Leu Arg Leu Leu Arg Arg Leu Glu Thr Leu Phe		
100	105	110
Glu Phe Glu Leu Gly Thr Leu Ala Trp Ser Leu Gln Ser Leu Gly Arg		
115	120	125
Ala Leu Lys Ser Ile Leu Arg Phe Leu Leu Leu Leu Leu Leu Leu		
130	135	140
Ile Gly Phe Ser Val Ile Gly Tyr Leu Leu Phe Lys Gly Tyr Glu Asp		
145	150	155
Leu Ser Glu Asn Glu Val Asp Gly Asn Ser Glu Phe Ser Ser Tyr Phe		
165	170	175
Asp Ala Phe Tyr Phe Leu Phe Val Thr Leu Thr Thr Val Gly Phe Gly		
180	185	190
Asp Leu Val Pro Val Trp Leu Gly Ile Ile Phe Phe Val Leu Phe Phe		
195	200	205
Ile Ile Val Gly Leu Leu Leu Asn Leu Leu Ile Ala Val Ile		
210	215	220

<210> 10  
<211> 120  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> consensus sequence

400	10		
Ala Leu Glu Glu Arg Ser Tyr Pro Ala Gly Glu Val Ile Ile Arg Gln			
1	5	10	15
Gly Asp Pro Gly Asp Ser Phe Tyr Ile Val Leu Ser Gly Glu Val Glu			
20	25	30	
Val Tyr Lys Leu Thr Glu Asp Gly Ala Arg Thr Pro Glu Val Ser Gln			
35	40	45	
Lys Gln Asp Thr Arg Glu Gln Val Val Ala Thr Leu Gly Pro Gly Asp			
50	55	60	
Phe Phe Gly Glu Leu Ala Leu Leu Thr Asn Asp Gly Asn Lys Asn Ala			
65	70	75	80
Val Leu Pro Ser Leu Asp Gln Gly Ala Pro Arg Thr Ala Thr Val Arg			
85	90	95	
Ala Leu Thr Asp Ser Glu Leu Leu Arg Leu Asp Arg Glu Asp Phe Arg			
100	105	110	
Arg Leu Leu Gln Lys Tyr Pro Glu			
115	120		

<210> 11  
<211> 111  
<212> PRT  
<213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; consensus sequence

&lt;400&gt; 11

Glu	Arg	Val	Arg	Leu	Asn	Val	Gly	Gly	Lys	Arg	Phe	Glu	Thr	Ser	Lys
1							5		10			15			
Ser	Thr	Leu	Thr	Arg	Phe	Lys	Pro	Asp	Thr	Leu	Leu	Gly	Arg	Leu	Leu
							20		25			30			
Lys	Thr	Asp	Ser	Asp	Val	His	Glu	Ala	Arg	Leu	Arg	Leu	Cys	Asp	Phe
							35		40			45			
Tyr	Asp	Asp	Glu	Thr	Gly	Glu	Tyr	Phe	Asp	Arg	Ser	Pro	Lys	His	
							50		55			60			
Phe	Glu	Thr	Ile	Leu	Asn	Phe	Tyr	Arg	Thr	Gly	Asp	Gly	Lys	Leu	His
							65		70			75			80
Arg	Pro	Glu	Val	Cys	Leu	Asp	Ser	Phe	Leu	Glu	Glu	Leu	Glu	Phe	Tyr
							85		90			95			
Gly	Leu	Asp	Glu	Leu	Ala	Ile	Glu	Ser	Cys	Cys	Glu	Asp	Glu	Tyr	
							100		105			110			

&lt;210&gt; 12

&lt;211&gt; 988

&lt;212&gt; PRT

&lt;213&gt; Rattus norvegicus

&lt;400&gt; 12

Met	Pro	Gly	Gly	Lys	Arg	Gly	Leu	Val	Ala	Pro	Gln	Asn	Thr	Phe	Leu	
1							5				10			15		
Glu	Asn	Ile	Val	Arg	Arg	Ser	Ser	Glu	Ser	Ser	Phe	Leu	Leu	Gly	Asn	
							20				25			30		
Ala	Gln	Ile	Val	Asp	Trp	Pro	Val	Val	Tyr	Ser	Asn	Asp	Gly	Phe	Cys	
							35				40			45		
Lys	Leu	Ser	Gly	Tyr	His	Arg	Ala	Asp	Val	Met	Gln	Lys	Ser	Ser	Thr	
							50				55			60		
Cys	Ser	Phe	Met	Tyr	Gly	Glu	Leu	Thr	Asp	Lys	Lys	Thr	Ile	Glu	Lys	
							65				70			75		80
Val	Arg	Gln	Thr	Phe	Asp	Asn	Tyr	Glu	Ser	Asn	Cys	Phe	Glu	Val	Leu	
							85				90			95		
Leu	Tyr	Lys	Lys	Asn	Arg	Thr	Pro	Val	Trp	Phe	Tyr	Met	Gln	Ile	Ala	
							100				105			110		
Pro	Ile	Arg	Asn	Glu	His	Glu	Lys	Val	Val	Leu	Phe	Leu	Cys	Thr	Phe	
							115				120			125		
Lys	Asp	Ile	Thr	Leu	Phe	Lys	Gln	Pro	Ile	Glu	Asp	Asp	Ser	Thr	Lys	
							130				135			140		
Gly	Trp	Thr	Lys	Phe	Ala	Arg	Leu	Thr	Arg	Ala	Leu	Thr	Asn	Ser	Arg	
							145				150			155		160
Ser	Val	Leu	Gln	Gln	Leu	Thr	Pro	Met	Asn	Lys	Thr	Glu	Thr	Val	His	
							165				170			175		
Lys	His	Ser	Arg	Leu	Ala	Glu	Val	Leu	Gln	Leu	Gly	Ser	Asp	Ile	Leu	
							180				185			190		
Pro	Gln	Tyr	Lys	Gln	Glu	Ala	Pro	Lys	Thr	Pro	Pro	His	Ile	Ile	Leu	
							195				200			205		
His	Tyr	Cys	Ala	Phe	Lys	Thr	Thr	Trp	Asp	Trp	Val	Ile	Leu	Ile	Leu	
							210				215			220		
Thr	Phe	Tyr	Thr	Ala	Ile	Met	Val	Pro	Tyr	Asn	Val	Ser	Phe	Lys	Thr	
							225				230			235		240
Lys	Gln	Asn	Asn	Ile	Ala	Trp	Leu	Val	Leu	Asp	Ser	Val	Val	Asp	Val	
							245				250			255		

Ile Phe Leu Val Asp Ile Val Leu Asn Phe His Thr Thr Phe Val Gly  
 260 265 270  
 Pro Gly Gly Glu Val Ile Ser Asp Pro Lys Leu Ile Arg Met Asn Tyr  
 275 280 285  
 Leu Lys Thr Trp Phe Val Ile Asp Leu Leu Ser Cys Leu Pro Tyr Asp  
 290 295 300  
 Ile Ile Asn Ala Phe Glu Asn Val Asp Glu Gly Ile Ser Ser Leu Phe  
 305 310 315 320  
 Ser Ser Leu Lys Val Val Arg Leu Leu Arg Leu Gly Arg Val Ala Arg  
 325 330 335  
 Lys Leu Asp His Tyr Leu Glu Tyr Gly Ala Ala Val Leu Val Leu Leu  
 340 345 350  
 Val Cys Val Phe Gly Leu Val Ala His Trp Leu Ala Cys Ile Trp Tyr  
 355 360 365  
 Ser Ile Gly Asp Tyr Glu Val Ile Asp Glu Val Thr Asn Thr Ile Gln  
 370 375 380  
 Ile Asp Ser Trp Leu Tyr Gln Leu Ala Leu Ser Ile Arg Thr Pro Tyr  
 385 390 395 400  
 Arg Tyr Asn Thr Ser Ala Gly Ile Trp Glu Gly Gly Pro Ser Lys Asp  
 405 410 415  
 Ser Leu Tyr Val Ser Ser Leu Tyr Phe Thr Met Thr Ser Leu Thr Thr  
 420 425 430  
 Ile Gly Phe Gly Asn Ile Ala Pro Thr Thr Asp Val Glu Lys Met Phe  
 435 440 445  
 Ser Val Ala Met Met Met Val Gly Ser Leu Leu Tyr Ala Thr Ile Phe  
 450 455 460  
 Gly Asn Val Thr Thr Ile Phe Gln Gln Met Tyr Ala Asn Thr Asn Arg  
 465 470 475 480  
 Tyr His Glu Met Leu Asn Asn Val Arg Asp Phe Leu Lys Leu Tyr Gln  
 485 490 495  
 Val Pro Lys Gly Leu Ser Glu Arg Val Met Asp Tyr Ile Val Ser Thr  
 500 505 510  
 Trp Ser Met Ser Lys Gly Ile Asp Thr Glu Lys Val Leu Ser Ile Cys  
 515 520 525  
 Pro Lys Asp Met Arg Ala Asp Ile Cys Val His Leu Asn Arg Lys Val  
 530 535 540  
 Phe Asn Glu His Pro Ala Phe Arg Leu Ala Ser Asp Gly Cys Leu Arg  
 545 550 555 560  
 Ala Leu Ala Val Glu Phe Gln Thr Ile His Cys Ala Pro Gly Asp Leu  
 565 570 575  
 Ile Tyr His Ala Gly Glu Ser Val Asp Ala Leu Cys Phe Val Val Ser  
 580 585 590  
 Gly Ser Leu Glu Val Ile Gln Asp Glu Glu Val Val Ala Ile Leu Gly  
 595 600 605  
 Lys Gly Asp Val Phe Gly Asp Ile Phe Trp Lys Glu Thr Thr Leu Ala  
 610 615 620  
 His Ala Cys Ala Asn Val Arg Ala Leu Thr Tyr Cys Asp Leu His Ile  
 625 630 635 640  
 Ile Lys Arg Glu Ala Leu Leu Lys Val Leu Asp Phe Tyr Thr Ala Phe  
 645 650 655  
 Ala Asn Ser Phe Ser Arg Asn Leu Thr Leu Thr Cys Asn Leu Arg Lys  
 660 665 670  
 Arg Ile Ile Phe Arg Lys Ile Ser Asp Val Lys Lys Glu Glu Glu Glu  
 675 680 685  
 Arg Leu Arg Gln Lys Asn Glu Val Thr Leu Ser Ile Pro Val Asp His  
 690 695 700  
 Pro Val Arg Lys Leu Phe Gln Lys Phe Lys Gln Gln Lys Glu Leu Arg

705	710	715	720
Asn Gln Gly Ser Ala Gln Ser Asp Pro Glu Arg Ser Gln Leu Gln Val			
725	730	735	
Glu Ser Arg Pro Leu Gln Asn Gly Ala Ser Ile Thr Gly Thr Ser Val			
740	745	750	
Val Thr Val Ser Gln Ile Thr Pro Ile Gln Thr Ser Leu Ala Tyr Val			
755	760	765	
Lys Thr Ser Glu Thr Leu Lys Gln Asn Asn Arg Asp Ala Met Glu Leu			
770	775	780	
Lys Pro Asn Gly Gly Ala Glu Pro Lys Cys Leu Lys Val Asn Ser Pro			
785	790	795	800
Ile Arg Met Lys Asn Gly Asn Gly Lys Gly Trp Leu Arg Leu Lys Asn			
805	810	815	
Asn Met Gly Ala His Glu Glu Lys Lys Glu Glu Trp Asn Asn Val Thr			
820	825	830	
Lys Ala Glu Ser Met Gly Leu Leu Ser Glu Asp Pro Lys Gly Ser Asp			
835	840	845	
Ser Glu Asn Ser Val Thr Lys Asn Pro Leu Arg Lys Thr Asp Ser Cys			
850	855	860	
Asp Ser Gly Ile Thr Lys Ser Asp Leu Arg Leu Asp Lys Ala Gly Glu			
865	870	875	880
Ala Arg Ser Pro Leu Glu His Ser Pro Ser Gln Ala Asp Ala Lys His			
885	890	895	
Pro Phe Tyr Pro Ile Pro Glu Gln Ala Leu Gln Thr Thr Leu Gln Glu			
900	905	910	
Val Lys His Glu Leu Lys Glu Asp Ile Gln Leu Leu Ser Cys Arg Met			
915	920	925	
Thr Ala Leu Glu Lys Gln Val Ala Glu Ile Leu Lys Leu Leu Ser Glu			
930	935	940	
Lys Ser Val Pro Gln Thr Ser Ser Pro Lys Pro Gln Ile Pro Leu Gln			
945	950	955	960
Val Pro Pro Gln Ile Pro Cys Gln Asp Ile Phe Ser Val Ser Arg Pro			
965	970	975	
Glu Ser Pro Glu Ser Asp Lys Asp Glu Ile Asn Phe			
980	985		

&lt;210&gt; 13

&lt;211&gt; 532

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 13

Met Thr Thr Arg Lys Ala Gln Glu Ile His Gly Lys Ala Pro Gly Gly			
1	5	10	15
Ser Val Ser Thr Gly Val Gly Thr Ala Glu Gly Ala Pro Ser Pro Ala			
20	25	30	
Gly Val Thr Pro Pro Pro Pro Arg Pro Gly Arg Thr Phe His Ala			
35	40	45	
Ile Phe Thr Arg Arg His Arg Thr Pro Asp Trp Gly Gly Cys Gly Val			
50	55	60	
Gly Ala Thr Arg Pro Phe Thr Gly Arg Pro Gly Cys Ala Arg His Gly			
65	70	75	80
Ala Thr Val Pro Ala Ala Leu Arg Cys Cys Glu Arg Leu Val Leu Asn			
85	90	95	
Val Ala Gly Leu Arg Phe Glu Thr Arg Ala Arg Thr Leu Gly Arg Phe			
100	105	110	
Pro Asp Thr Leu Leu Gly Asp Pro Val Arg Arg Ser Arg Phe Tyr Asp			

115	120	125
Gly Ala Arg Ala Glu Tyr Phe Phe Asp Arg His Arg Pro Ser Phe Asp		
130	135	140
Ala Val Leu Tyr Tyr Gln Ser Gly Gly Arg Leu Arg Arg Pro Ala		
145	150	155
His Val Pro Leu Asp Val Phe Leu Glu Glu Val Ser Phe Tyr Gly Leu		
165	170	175
Gly Arg Arg Leu Ala Arg Leu Arg Glu Asp Glu Gly Cys Ala Val Ala		
180	185	190
Glu Arg Pro Leu Pro Pro Phe Ala Arg Gln Leu Trp Leu Leu Phe		
195	200	205
Glu Phe Pro Glu Ser Ser Gln Ala Ala Arg Val Leu Ala Val Val Ser		
210	215	220
Val Leu Val Ile Leu Val Ser Ile Val Val Phe Cys Leu Glu Thr Leu		
225	230	235
Pro Asp Phe Arg Asp Asp Arg Asp Asp Pro Gly Leu Ala Pro Val Ala		
245	250	255
Ala Ala Thr Gly Ser Phe Leu Ala Arg Leu Asn Gly Ser Ser Pro Met		
260	265	270
Pro Gly Ala Pro Pro Arg Gln Pro Phe Asn Asp Pro Phe Phe Val Val		
275	280	285
Glu Thr Leu Cys Ile Cys Trp Phe Ser Phe Glu Leu Leu Val His Leu		
290	295	300
Val Ala Cys Pro Ser Lys Ala Val Phe Phe Lys Asn Val Met Asn Leu		
305	310	315
Ile Asp Phe Val Ala Ile Leu Pro Tyr Phe Val Ala Leu Gly Thr Glu		
325	330	335
Leu Ala Arg Gln Arg Gly Val Gly Gln Pro Ala Met Ser Leu Ala Ile		
340	345	350
Leu Arg Val Ile Arg Leu Val Arg Val Phe Arg Ile Phe Lys Leu Ser		
355	360	365
Arg His Ser Lys Gly Leu Gln Ile Leu Gly Gln Thr Leu Arg Ala Ser		
370	375	380
Met Arg Glu Leu Gly Leu Leu Ile Phe Phe Leu Phe Ile Gly Val Val		
385	390	395
Leu Phe Ser Ser Ala Val Tyr Phe Ala Glu Val Asp Arg Val Asp Thr		
405	410	415
His Phe Thr Ser Ile Pro Glu Ser Phe Trp Trp Ala Val Val Thr Met		
420	425	430
Thr Thr Val Gly Tyr Gly Asp Met Ala Pro Val Thr Val Gly Gly Lys		
435	440	445
Ile Val Gly Ser Leu Cys Ala Ile Ala Gly Val Leu Thr Ile Ser Leu		
450	455	460
Pro Val Pro Val Ile Val Ser Asn Phe Ser Tyr Phe Tyr His Arg Glu		
465	470	475
Thr Glu Gly Glu Ala Gly Met Tyr Ser His Val Asp Thr Gln Pro		
485	490	495
Cys Gly Thr Leu Glu Gly Lys Ala Asn Gly Gly Leu Val Asp Ser Glu		
500	505	510
Val Pro Glu Leu Leu Pro Pro Leu Trp Pro Pro Ala Gly Lys His Met		
515	520	525
Val Thr Glu Val		
530		